



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/725,980

12/01/2003

Radoslav Danilak

NVID-P000817

4928

7590 07/03/2007  
WAGNER, MURABITO & HAO LLP  
Third Floor  
Two North Market Street  
San Jose, CA 95113

EXAMINER
----------

LEE, CHUN KUAN

ART UNIT	PAPER NUMBER
----------	--------------

2181

MAIL DATE	DELIVERY MODE
-----------	---------------

07/03/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/725,980	<b>Applicant(s)</b> DANILAK, RADOSLAV	
	<b>Examiner</b> Chun-Kuan (Mike) Lee	<b>Art Unit</b> 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### **RESPONSE TO ARGUMENTS**

1. Applicant's arguments filed 04/19/2007 have been fully considered but they are not persuasive. Objection of the Drawings for Figure 1 is maintained. Currently, claims 1-20 are pending for examination.

2. In response to applicant's arguments, on page 8, 2<sup>nd</sup> paragraph, regarding the drawing objections for Figure 1 that the figure is not consider prior art because the disk controller 107 of Figure 1 is recited as performing the novel disk I/O method as recited in the claims of the present application, applicant's arguments have fully been considered, but are not found to be persuasive.

The novel disk I/O method as claimed does appear to be shown at the system level drawing of Figure 1, more specifically, said novel disk I/O method appears to be shown in Figure 2. Therefore, at least at the system level, Figure 1 is showing components that are well known. Furthermore, in accordance to the disclosure of the Specification for Figure1, "Figure 1 shows a diagram depicting a computer system 100 showing the basic components of a computer system platform that may be used to implement the functionality of an embodiment of the present invention" (Specification, p. 10, ll. 1-3), wherein the novelty of the instant invention does not appear to be depicted in Figure 1.

Art Unit: 2181

3. In response to applicant's arguments, on page 11, 1<sup>st</sup> to 2<sup>nd</sup> paragraph, regarding independent claims 1, 9 and 14 rejected under 35 U.S.C. 103(a) that the combination of references does not teach/suggest the newly amended limitation of "upon receiving a request from a disk I/O from an application executing on the computer system;" applicant's arguments have fully been considered, but are not found to be persuasive.

Wood teaches the transferring of a start command to a disk drive (Fig. 3, ref. 318) via the disk controller (subsystem controller 314 of Fig. 3), wherein the start command cause a start up (e.g. start up by spin-up) of the disk drive, and as the start command is transferred from the host computer (Fig. 3, ref. 302) to initiate the disk drive for data transferring, Wood's teaching of the transferring of the start command includes the request from an application on the host computer, which is causing the host computer to transfer the start command to properly spin-up (start up) the disk drive for data transferring.

4. In response to applicant's arguments, on page 11, 1<sup>st</sup> to 2<sup>nd</sup> paragraph, regarding independent claims 1, 9 and 14 rejected under 35 U.S.C. 103(a) that the combination of references does not teach/suggest with regard to the claimed limitation "subsequent to transferring the command causing the start up, prepare disk transaction information...;" applicant's arguments have fully been considered, but are not found to be persuasive.

AAPA teaches the preparation of disk transaction information (Specification, p. 4, ll. 13-14) and Wood teaches that subsequent to the transferring of the start command predetermined OOB signals are initiated (col. 6, ll. 45-47). Therefore, by combining

Wood with AAPA, the resulting combination teaches subsequent to transferring the command (e.g. start command) causing the start up, initiated the preparation of the disk transaction information.

## **I. INFORMATION CONCERNING OATH/DECLARATION**

### **Oath/Declaration**

5. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. 1.63.

## **II. OBJECTIONS TO THE DRAWINGS**

### ***Drawings***

6. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

## **III. REJECTIONS BASED ON PRIOR ART**

### ***Claim Rejections - 35 USC § 103***

Art Unit: 2181

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Wood et al. (US Patent 6,915,363).

8. As per claims 1, 9 and 14, AAPA teaches a computer system and method comprising:

a processor (Drawings, Fig. 1, ref. 101);

a system memory (Drawings, Fig. 1, ref. 103) coupled to the processor;

a bridge component (Drawings, Fig. 1, ref. 102, 105) coupled to the processor;

and

a disk controller (Drawings, Fig. 1, ref. 107) coupled to the bridge component;

preparing disk transaction information by packaging a plurality of PRD (physical region descriptor) data structures and a plurality of CPB (command parameter block) data structures comprising the disk transaction (Specification, page 4, ll. 9-22);

transferring the disk transaction information to the disk controller via the bridge component (Specification, page 4, ll. 22-24), wherein the bridge component is accessed as the disk transaction information is transferred;

implementing a disk I/O (e.g. disk transaction), wherein the disk controller processes the disk transaction information to control the disk drive (Specification, page 4, ll. 22-24).

AAPA does not teach the computer system and method for implementing a bypass method for efficient disk I/O (input output), comprising:

upon receiving a request for a disk I/O from an application executing on the computer system, transferring a command to the disk controller, the command causing a start up of the disk drive coupled to the disk controller;

subsequent to transferring the command causing the startup, preparing disk transaction information; and

the disk controller including a plurality of bypass registers for receiving the disk transaction information.

Wood teaches a system and method comprising:

obviously upon receiving a request for a disk I/O from an application executing on the computer system, transferring a start command to a disk drive (Fig. 3, ref. 318) via the disk controller (subsystem controller 314 of Fig. 3), wherein the start command cause a start up of the disk drive (col. 1, ll. 51-54; col. 2, ll. 15-21; col. 6, ll. 11-26 and col. 6, ll. 40-47), as the start command is transferred from the host computer to initiate the disk drive for data transferring, it would then be obvious that an application on the host computer is requesting to implement the data transferring with the disk drive, which causing the host computer to transfer the start command;

subsequent to transferring the command (e.g. start command) causing the startup, preparing disk transaction information (col. 6, ll. 45-47), as predetermined OOB signals are initiated subsequent to transferring of the start command, it would have been obvious to implementing the preparing of disk transaction information; and

the disk controller including a plurality of bypass registers (buffer 210 of Fig. 2) for receiving the disk transaction information (e.g. data transferred from a host computer (Fig. 2, ref. 200)) (col. 4, ll. 50-52).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Wood's start command and buffer into AAPA's computer system and method for transferring data for the benefit of provide greater control for the start up of ATA disk drive (col. 2, ll. 55-59) to obtain the invention as specified in claims 1, 9 and 14.

9. As per claim 2, AAPA and Wood teach all the limitation of claim 1 as discussed above, where AAPA teaches the method for disk I/O in the computer system further comprising:

preparing the disk transaction information by using a processor of the computer system (AAPA, Specification, page 4, ll. 13-14); and

transferring the disk transaction information from the processor to the disk controller (AAPA, Specification, page 4, ll. 19-22).



Art Unit: 2181

10. As per claim 3, AAPA and Wood teach all the limitation of claim 3 as discussed above, where AAPA teaches the method for disk I/O in the computer system further comprising accessing a bus coupled to the disk controller to transfer the disk transaction information from the processor to the disk controller (AAPA, Drawings, Fig. 1 and Specification, page 4, ll. 19-22).

11. As per claim 4, AAPA and Wood teach all the limitation of claim 3 as discussed above, where AAPA teaches the method for disk I/O in the computer system further comprising accessing the bridge component (AAPA, Drawings, Fig. 1, ref. 102, 105) controlling the bus coupled to the disk controller and transferring the disk transaction information from the processor to the disk controller via the bridge component (AAPA, Drawings, Fig. 1 and Specification, page 4, ll. 19-22).

12. As per claim 5, AAPA and Wood teach all the limitation of claim 4 as discussed above, where AAPA teaches the method for disk I/O in the computer system further comprising wherein the bridge component is a South bridge (AAPA, Drawings, Fig. 1, ref. 105) of the computer system.

13. As per claim 6, AAPA and Wood teach all the limitation of claim 1 as discussed above, where Wood teaches the method for disk I/O in the computer system further comprising wherein the transferring of the command to the disk controller causing the start up of the disk drive is configured to hide a start up latency of the disk drive (Wood,

Art Unit: 2181

col. 1, ll. 51-54; col. 2, ll. 15-21; col. 6, ll. 11-26 and col. 6, ll. 40-47), as the start command is transferred before the preparing and transferring of data such as the disk transaction information, the start up latency of the disk drive would then be hidden.

14. As per claim 7, AAPA and Wood teach all the limitation of claim 1 as discussed above, where Wood teaches the method for disk I/O in the computer system further comprising wherein the disk transaction information includes a plurality of PRD (physical region descriptor) data structures and a plurality of CPB (command parameter block) data structures for implementing the disk transaction (AAPA, Specification, page 4, ll. 15-22).

15. As per claim 8, AAPA and Wood teach all the limitation of claim 1 as discussed above, where both teach the method for disk I/O in the computer system further comprising wherein the disk drive is compatible with a version of the ATA standard (AAPA, Specification, page 3, ll. 13-14; page 4, ll. 13-14 and Wood, col. 2, ll. 55-59).

16. As per claim 10, AAPA and Wood teach all the limitation of claim 9 as discussed above, where AAPA teaches the computer readable media further comprising wherein the bridge component is a South bridge (AAPA, Drawings, Fig. 1, ref. 105) of the computer system.

17. As per claim 11, AAPA and Wood teach all the limitation of claim 10 as discussed above, where AAPA teaches the computer readable media further comprising:

accessing a North bridge (AAPA, Drawings, Fig. 1, ref. 102) to transfer the disk transaction information (AAPA, Specification, page 4, ll. 19-22); and

transferring the disk transaction information from the processor to the disk controller via the North bridge (AAPA, Drawings, Fig. 1, ref. 102) and the South bridge (AAPA, Drawings, Fig. 1, ref. 105) of the computer system (AAPA, Specification, page 4, ll. 19-22).

18. As per claim 12, AAPA and Wood teach all the limitation of claim 9 as discussed above, where Wood teaches the computer readable media further comprising wherein the transferring of the command to the disk controller causing the start up of the disk drive is configured to hide a start up latency of the disk drive (Wood, col. 1, ll. 51-54; col. 2, ll. 15-21; col. 6, ll. 11-26 and col. 6, ll. 40-47), as the start command is transferred before the preparing and transferring of data such as the disk transaction information, the start up latency of the disk drive would then be hidden.

19. As per claim 13, AAPA and Wood teach all the limitation of claim 9 as discussed above, where both teach the computer readable media further comprising wherein the disk drive is compatible with a version of the ATA standard (AAPA, Specification, page 3, ll. 13-14; page 4, ll. 13-14 and Wood, col. 2, ll. 55-59).

20. As per claim 15, AAPA and Wood teach all the limitation of claim 14 as discussed above, where AAPA teaches the computer system further comprising:

preparing the disk transaction information by using a processor of the computer system (AAPA, Specification, page 4, ll. 13-14); and

transferring the disk transaction information from the processor to the disk controller (AAPA, Specification, page 4, ll. 19-22).

21. As per claim 16, AAPA and Wood teach all the limitation of claim 14 as discussed above, where AAPA teaches the computer readable media further comprising wherein the disk controller (AAPA, Drawings, Fig. 1, ref. 107) is integrated within bridge component (AAPA, Drawings, Fig. 1, ref. 105).

22. As per claim 17, AAPA and Wood teach all the limitation of claim 14 as discussed above, where AAPA teaches the computer system further comprising wherein the bridge component is a South bridge (AAPA, Drawings, Fig. 1, ref. 105) of the computer system.

23. As per claim 18, AAPA and Wood teach all the limitation of claim 14 as discussed above, where Wood teaches the computer system further comprising wherein the transferring of the command to the disk controller causing the start up of the disk drive is configured to hide a start up latency of the disk drive (Wood, col. 1, ll. 51-

54; col. 2, ll. 15-21; col. 6, ll. 11-26 and col. 6, ll. 40-47), as the start command is transferred before the preparing and transferring of data such as the disk transaction information, the start up latency of the disk drive would then be hidden.

24. As per claim 19, AAPA and Wood teach all the limitation of claim 14 as discussed above, where AAPA teaches the computer system further comprising wherein the disk transaction information includes a plurality of PRD (physical region descriptor) data structures and a plurality of CPB (command parameter block) data structures for implementing the disk transaction (AAPA, Specification, page 4, ll. 15-22).

25. As per claim 20, AAPA and Wood teach all the limitation of claim 14 as discussed above, where both teach the computer system further comprising wherein the disk drive is compatible with a version of the ATA standard (AAPA, Specification, page 3, ll. 13-14; page 4, ll. 13-14 and Wood, col. 2, ll. 55-59).

#### **IV. CLOSING COMMENTS**

##### **Conclusion**

##### **a. STATUS OF CLAIMS IN THE APPLICATION**

The following is a summary of the treatment and status of all claims in the application as recommended by **M.P.E.P. 707.07(i)**:

##### **a(1) CLAIMS REJECTED IN THE APPLICATION**

Per the instant office action, claims 1-20 have received a final action on the merits. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

##### **b. DIRECTION OF FUTURE CORRESPONDENCES**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun-Kuan (Mike) Lee whose telephone number is (571) 272-0671. The examiner can normally be reached on 8AM to 5PM.

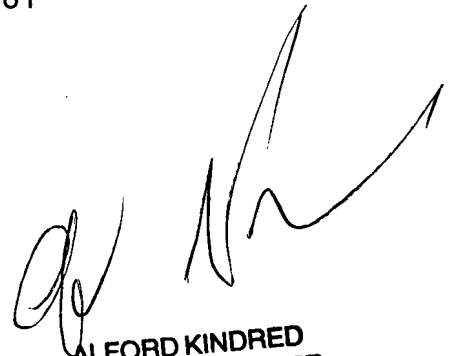
**IMPORTANT NOTE**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alford Kindred can be reached on (571) 272-4037. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 27, 2007

Chun-Kuan (Mike) Lee  
Examiner  
Art Unit 2181



ALFORD KINDRED  
PRIMARY EXAMINER